

This corrected listing of claims will replace all prior versions, and listings, of claims in the application , including those that were part of the Amendment Under 37 C.F.R. 1.111 that was filed on June 14, 2004:

Listing of Claims:

Claim 1 (cancelled)

Claim 2 (withdrawn): The apparatus of claim 1, wherein the plug has an axial bore extending longitudinally into the plug and the engagement surface includes internal threads in said bore, and wherein the engagement structure comprises external threads on the barrel rod that are sized and shaped to screw into the internal threads in said bore.

Claim 3 (withdrawn): The apparatus of claim 2, including a knob on an end of the barrel rod outside the muzzle, wherein the knob has a transverse hole extending therethrough, a cable extending through the hole in the knob and being long enough to extend to the trigger guard, and a lock device configured to lock the cable to the trigger guard.

Claim 4 (withdrawn): The apparatus of claim 1, wherein the engagement surface includes a shoulder in a bore extending into the plug, and wherein the engagement structure includes a ball that is moveable radially in relation to the barrel rod into contact with the shoulder.

Claim 5 (withdrawn): The apparatus of claim 4, wherein the bore in the plug is sized and shaped to receive a proximal end of the barrel rod with said ball;

Claim 6 (withdrawn): The apparatus of claim 5, including a cam surface on the barrel rod adjacent the ball configured to cam the ball radially outward as the ball rolls on the cam surface.

Claim 7 (withdrawn): The apparatus of claim 6, including a seat surface extending from the cam surface, said seat surface being positioned to hold the ball partially protruded radially from the barrel rod into contacting alignment with the engagement surface.

Claim 8 (withdrawn): The apparatus of claim 7, wherein the barrel rod includes an external sheath extending from a position outside the barrel, through the barrel, and into the bore in the plug, and an inner shaft extending longitudinally through the external sheath from a distal end longitudinally outward from the external sheath and to a proximal end in the bore in the plug, said cam surface and seat surface being formed in the inner shaft adjacent the proximal end of the inner shaft so that longitudinal movement of the inner shaft in relation to the outer sheath cams the ball radially into or out of contactable alignment with the engagement surface.

Claim 9 (withdrawn): The apparatus of claim 8, including a transverse hole through the inner shaft adjacent the distal end of the inner shaft and adjacent the distal end of the outer sheath in a position such that a lock component extending through the hole abuts the distal end of the outer sheath to prevent longitudinal movement of the inner shaft in relation to the outer sheath in a direction that causes the cam surface to collapse the ball radially out of engageable alignment with the engagement surface.

Claims 10-11 (cancelled)

Claim 12 (currently amended): The firearm lock apparatus of claim ~~11~~50, including a transverse hole through the outer tube adjacent the distal end of the outer tube, and a lock device that is extendable through the hole to block extension of the tool through the outer tube to the inner shaft.

Claim 13 (cancelled)

Claim 14 (withdrawn): A system for locking a firearm, the system comprising:

a barrel rod comprising a threaded portion, wherein the barrel rod is longer than a barrel of the firearm and is of sufficient length to protrude from the barrel of the firearm; and

a firing chamber plug sized to fit within an ammunition chamber of the firearm and configured to removably engage the threaded portion of the barrel rod.

Claim 15 (withdrawn): The system of claim 14 wherein the barrel rod comprises a hole, the system further comprising:

a cable comprising a first permanent loop at a first end of the cable and a second permanent loop at a second end of the cable, wherein the cable has a length sufficient to form a third loop between the barrel rod and a trigger guard of the firearm; and

a lock configured to lock together the first permanent loop and the second permanent loop of the cable to lock the third loop formed between the barrel rod and the trigger guard.

Claim 16 (withdrawn): The system of claim 15 wherein the cable passes through the hole and the lock locks together the first permanent loop, the second permanent loop, and the trigger guard.

Claim 17 (withdrawn): The system of claim 15 wherein the first permanent loop passes through the trigger guard and the lock locks together the first permanent loop, the second permanent loop, and the hole.

Claim 18 (withdrawn): The system of claim 15 wherein the cable passes through the hole and the first permanent loop passes through the trigger guard, and the lock locks together the first permanent loop and the second permanent loop.

Claim 19 (withdrawn): The system of claim 15 wherein the cable is sufficiently stiff to substantially prevent twisting or turning of the barrel rod.

Claim 20 (withdrawn): The system of claim 15 wherein the cable further comprises a polymer coating for protecting an exterior of the firearm from being scratched.

Claim 21 (withdrawn): The system of claim 14 further comprising a polymer coating applied to the barrel rod for protecting the barrel of the firearm from being scratched.

Claim 22 (withdrawn): The system of claim 14 wherein the barrel rod comprises a knurled knob at an end to facilitate pushing, twisting, and turning the barrel rod with fingers.

Claim 23 (currently amended): A system for locking a firearm, the system comprising:

a barrel rod comprising a pair of pins configured to protrude outward from a longitudinal axis of the barrel rod, wherein the barrel rod is rigid and is longer than a barrel of the firearm and is of sufficient length to protrude from the barrel of the firearm; and

a firing chamber plug sized to fit within ~~an ammunition~~ a firing chamber of the firearm and configured to removably engage the pair of pins of the barrel rod, wherein the firing chamber plug comprises:

a hole for receiving an end of the barrel rod;

a spring compressed by the end of the barrel rod;

a first pair of grooves for receiving the pair of pins and for guiding the pair of pins longitudinally along the firing chamber plug;

a second pair of grooves connected transversely to the first pair of grooves for guiding the pair of pins transversely as the barrel rod turns;

and

a third pair of grooves connected to the second pair of grooves for seating the pair of pins after the spring pushes the pair of pins into the third pair of grooves, wherein the third pair of grooves is configured to prevent the barrel rod from turning.

Claims 24-25 (cancelled)

Claim 26 (currently amended): The system of claim ~~25~~ 43 wherein the tool is a hexagonal wrench.

Claim 27 (currently amended): The system of claim 23 wherein the barrel rod comprises a knurled knob to facilitate pushing, ~~twisting~~, and turning of the barrel rod with fingers.

Claim 28 (cancelled)

Claim 29 (withdrawn): A system for locking a firearm, the system comprising:

a barrel rod comprising a pair of balls configured to protrude outward from a longitudinal axis of the barrel rod, wherein the barrel rod is rigid and is longer than a barrel of the firearm and is of sufficient length to protrude from the barrel of the firearm; and

a firing chamber plug sized to fit within an ammunition chamber of the firearm and configured to removably engage the pair of balls of the barrel rod.

Claim 30 (withdrawn): The system of claim 29 wherein the firing chamber plug comprises:

a hole for receiving an end of the barrel rod; and

a lip for holding the pair of balls within the firing chamber plug to prevent the barrel rod from disengaging the firing chamber plug.

Claim 31 (withdrawn): The system of claim 29 wherein the firing chamber plug comprises:

a hole for receiving an end of the barrel rod; and

a channel for seating the pair of balls within the firing chamber plug to prevent the barrel rod from disengaging the firing chamber plug.

Claim 32 (withdrawn): The system of claim 29 wherein the barrel rod comprises:

an outer tube with a pair of holes in which the pair of balls rest; and

an inner shaft comprising a narrow portion, wherein the inner shaft is configured to occupy and slide within the outer tube and to cause the pair of balls to retract toward the longitudinal axis when the narrow portion is aligned between the two balls, such that the balls retract when the narrow portion is aligned between the two balls when the barrel rod is inserted into the firing chamber plug, and the balls protrude to engage the firing chamber plug when the inner shaft slides back away from the firing chamber plug.

Claim 33 (withdrawn): The system of claim 32 wherein the inner shaft comprises a push button that comprises a hole and the outer tube comprises a knob, the push button and the knob protrude from the barrel, the system further comprising a lock configured to be placed through the hole, to abut the knob, and to be locked to prevent the inner shaft from retracting the pair of balls to disengage the barrel rod from the firing chamber plug.

Claim 34 (withdrawn): The system of claim 32 wherein the outer tube comprises a bottom plug configured to prevent the inner shaft from being pushed outside of the outer tube and wherein the barrel rod further comprises a spring between the bottom

plug and an end of the inner shaft, wherein the spring is configured to push the inner shaft outward to cause the pair of balls to protrude from the outer tube.

Claim 35 (withdrawn): The system of claim 29 wherein the barrel rod comprises a hole, the system further comprising:

a cable comprising a first permanent loop at a first end of the cable and a second permanent loop at a second end of the cable, wherein the cable has a length sufficient to form a third loop between the barrel rod and a trigger guard of the firearm; and

a lock configured to lock together the first permanent loop and the second permanent loop of the cable to lock the third loop formed between the barrel rod and the trigger guard.

Claim 36 (withdrawn): The system of claim 35 wherein the cable passes through the hole and the lock locks together the first permanent loop, the second permanent loop, and the trigger guard.

Claim 37 (withdrawn): The system of claim 35 wherein the first permanent loop passes through the trigger guard and the lock locks together the first permanent loop, the second permanent loop, and the hole.

Claim 38 (withdrawn): The system of claim 35 wherein the cable passes through the hole and the first permanent loop passes through the trigger guard, and the lock locks together the first permanent loop and the second permanent loop.

Claim 39 (withdrawn): The system of claim 35 wherein the cable further comprises a polymer coating for protecting an exterior of the firearm from being scratched.

Claim 40 (withdrawn): The system of claim 29 further comprising a polymer coating applied to the barrel rod for protecting the barrel of the firearm from being scratched.

Claim 41 (withdrawn): The system of claim 29 wherein the barrel rod comprises a knurled knob to facilitate pushing, twisting, and turning the barrel rod with fingers.

Claim 42 (cancelled)

Claim 43 (new): A system for locking a firearm, the system comprising:

a barrel rod comprising a pair of pins configured to protrude outward from a longitudinal axis of the barrel rod, wherein the barrel rod is rigid and is longer than a barrel of the firearm and is of sufficient length to protrude from the barrel of the firearm;

a firing chamber plug sized to fit within a firing chamber of the firearm and configured to removeably engage the pair of pins of the barrel rod; and

wherein the barrel rod also comprises: (i) an inner shaft shorter in length than the barrel, the pair of pins protruding from the inner shaft; and (ii) an outer tube comprising a first hole, the outer tube being configured to fit over the inner shaft and to slide and turn freely over the inner shaft such that turning or depressing the outer tube neither turns nor depresses the inner shaft, the outer tube protrudes from the barrel and permits access to the inner shaft through the

first hole such that the barrel rod can be disengaged from the firing chamber plug only by accessing the inner shaft through the first hole with a tool.

Claim 44 (new): A system for locking a firearm, the system comprising:

a barrel rod comprising a pair of pins configured to protrude outward from a longitudinal axis of the barrel rod, wherein the barrel rod is rigid and is longer than a barrel of the firearm and is of sufficient length to protrude from the barrel of the firearm; and

a firing chamber plug sized to fit within a firing chamber of the firearm and configured to removeably engage the pair of pins of the barrel rod; and

wherein the barrel rod also comprises a polymer covering to protect the barrel from being scratched.

Claim 45 (new) Firearm lock apparatus, comprising:

a barrel rod comprising a proximal end, a distal end, and at least one pin adjacent the proximal end protruding radially outward in relation to a longitudinal axis of the barrel rod, wherein the barrel rod is small enough in diameter to extend through the barrel to a firing chamber of the firearm; and

a firing chamber plug sized to fit within the firing chamber of the firearm, said firing chamber plug comprising: (i) a hole for receiving the proximal end of the barrel rod; (ii) a first groove for receiving the pin and for guiding the pin longitudinally along the firing chamber plug as the proximal end of the barrel rod slides into the hole in the firing chamber plug; (iii) a second grooves connected transversely to the first groove for guiding the pin transversely as the barrel rod turns in the firing chamber plug; and (iv) a third

groove connected to and protruding longitudinally from the second groove for seating the pin in a manner that prevents the barrel rod from turning whenever the pin is seated in said third groove.

Claim 46 (new): The firearm lock apparatus of claim 45, including a spring positioned in a manner that provides a spring bias between the barrel rod and the firing chamber plug that requires the spring to be compressed in order for the end of the barrel rod to be inserted far enough into the hole in the firing chamber plug for the pin to be seated in the third groove and that requires the spring to be compressed in order for the pins to be unseated from the third groove.

Claim 47 (new): The firearm lock apparatus of claim 46, wherein the spring is a coiled compression spring positioned in the hole in the firing chamber plug.

Claim 48 (new): Firearm lock apparatus for locking a firearm that has a barrel extending in a distal direction from a firing chamber, comprising:

a firing chamber plug that is sized and shaped to fit in the firing chamber of the firearm in a manner that prevents the firing chamber plug from being moveable from the firing chamber into the barrel of the firearm, said firing chamber plug having an attachment structure that releasably engages a mating attachment structure on a proximal end of an inner shaft of a barrel rod in a manner that prohibit separation of the barrel rod from the firing chamber plug without first turning the inner shaft in relation to the firing chamber plug, said inner shaft of the barrel rod also having a tool engagement structure at its distal end for mating engagement with a tool that, when engaged with the tool

engagement structure, can be used to turn the inner shaft of the barrel rod in relation to the firing chamber plug; and

said barrel rod also having an outer tube positioned over and extending longitudinally beyond the distal end of the inner shaft in a manner that allows free rotation of the outer tube in relation to the inner shaft, but wherein said outer tube is blocked against separation from the inner shaft so that the outer tube cannot be used to turn the inner shaft in relation to the firing chamber plug and cannot be separated from the inner shaft; said outer tube being long enough to extend out of the barrel of the firearm from a location inside the barrel when the inner shaft is attached to the firing chamber plug by the attachment structures on the firing chamber plug and the inner shaft so that the inner shaft, when detached from the firing chamber plug, can be removed from the barrel of the outer tube; and said outer tube having a hole in its distal end to accommodate insertion of the tool longitudinally through the outer tube to the tool engagement structure at the distal end of the inner shaft.

Claim 49 (new): The firearm lock apparatus of claim 48, wherein the mating attachment structures on the inner shaft and the firing chamber plug are configured to require both longitudinal and rotational movement of the inner shaft in relation to the firing chamber plug to detach the inner shaft from the firing chamber plug, and wherein the outer tube is also slideable longitudinally in a telescopic manner in relation to the inner shaft so that the outer tube also cannot be used to impart longitudinal movement to the inner shaft in relation to the firing chamber plug.

Claim 50 (new): The firearm lock apparatus of claim 49, an enlargement on the outer tube in a location that is outside the barrel of the firearm when the inner shaft is attached to the firing chamber plug in the firing chamber of the firearm, said enlargement being larger in diameter than the barrel to thereby function as a limit stop against the barrel to limit longitudinal movement of the outer tube toward the proximal end of the inner shaft.

Claim 51 (new): Firearm locking apparatus, comprising:

firing chamber plug means for placement in a firing chamber of the firearm to prevent a live ammunition cartridge from being placed in the firing chamber;

a shaft sized for being positioned in a barrel of the firearm and extending to the firing chamber plug means, said shaft being attachable to the firing chamber plug means to prevent removal of the firing chamber plug means from the firing chamber;

attachment means for attaching the shaft to the firing chamber plug means in a manner that requires both longitudinal and rotational movement of the shaft in relation to the firing chamber plug means to detach the shaft from the firing chamber plug means in order to remove the firing chamber plug means from the firing chamber;

tool engagement means at a distal end of the shaft for receiving a tool that can impart both longitudinal and rotational motion to the shaft for detaching the shaft from the firing chamber plug means; and

means for inserting the shaft into and removing the shaft from the barrel and for covering the shaft so that the shaft and the tool engagement means are accessible only by the tool when the shaft is attached to the firing chamber plug means.

Claim 52 (new): The firearm locking apparatus of claim 51, wherein said means for asserting the shaft into and removing the shaft from the barrel and for covering the shaft includes an outer tube positioned telescopically over the shaft, means for connecting the outer tube to the shaft in a manner that allows the outer tube to rotate freely in relation to the shaft and to move longitudinally in relation to the shaft so that the outer tube cannot impart the longitudinal and rotational motion to the shaft needed to detach the shaft from the firing chamber plug means, but wherein such longitudinal movement is limited so that the outer tube cannot separate from the shaft as the outer tube is pulled out of the barrel, said tool engagement means being reachable by the tool through a hole at a distal end of the outer tube.

Claim 53 (new): The firearm locking apparatus of claim 52, including means for preventing longitudinal movement of the outer tube toward the firing chamber plug far enough either to impart longitudinal movement from the outer tube to the shaft or to expose the tool engagement means outside the outer tube.

Claim 54 (new): The firearm locking apparatus of claim 52, including means for removably occluding the hole in the outer tube to prevent insertion of the tool through the outer tube to the tool engagement means.

Claim 55 (new): The firearm locking apparatus of claim 51, wherein the attachment means includes a protrusion adjacent the proximal end of the shaft

extending radially outward in relation to a longitudinal axis of the shaft, and the firing chamber plug means having an axial hole large enough to receive the proximal end of the shaft, a longitudinal slot for receiving and guiding the protrusion as the shaft slides longitudinally into the hole, a transverse slot extending from the longitudinal slot for receiving and guiding the protrusion as the shaft rotates in the hole, and a reverse longitudinal slot for receiving and seating the protrusion upon reverse longitudinal movement of the shaft.

Claim 56 (new): The firearm locking apparatus of claim 55, including means for resisting but not prohibiting longitudinal movement of the shaft into the hole in the firing chamber plug means and for thereby also resisting but not prohibiting unseating of the protrusion from the reverse longitudinal slot.

Claim 57 (new): The firearm locking apparatus of claim 56, wherein the means for resisting longitudinal movement of the shaft into the hole comprises a coil spring positioned to abut the shaft on one end of the spring and to abut the firing chamber plug means on the opposite end of the spring.

Claim 58 (new): The firearm locking apparatus of claim 57, wherein the coil spring is positioned in the hole in the firing chamber plug means.

Claim 59 (new): A method of locking and unlocking a firearm, comprising:
positioning a plug in a firing chamber of the firearm;
extending a rod from a barrel of the firearm to the plug;
attaching the rod to the plug in a manner that requires both longitudinal and rotational movement of the rod in relation to the plug for detaching the rod from the plug by extending a tool to engage the shaft through an outer tube that

is positioned in a manner that is freely slideable longitudinally and rotationally over the shaft and that extends out of the barrel, and by using the tool through the outer tube to push the shaft toward the plug and to rotate the shaft in relation to the plug to make the attachment, and then removing the tool from the outer tube;

detaching the rod from the plug by inserting the tool through the outer tube to engage the shaft, pushing the shaft with the tool longitudinally toward the plug and rotating the shaft in relation to the plug with the tool;

pulling the shaft out of the barrel with the outer tube; and

removing the plug from the firing chamber.

Claim 60 (new): The method of claim 59, including making the attachment by using the tool to push the shaft into a hole in the plug against a spring bias to slide a radial protrusion on the shaft into and longitudinally along a longitudinal slot in the plug and to turn the shaft in the plug to slide the protrusion into a transverse slot to a reverse longitudinal slot, and letting the spring bias seat the protrusion in the reverse longitudinal slot.

Claim 61 (new): The method of claim 60, including detaching the shaft from the plug by using the tool to push the shaft against the spring bias to unseat the protrusion from the reverse longitudinal slot and to turn the shaft to move the protrusion along the transverse slot to the longitudinal slot, and letting the spring bias push the shaft out of the hole in the plug.

Claim 62 (new): The method of claim 59, including blocking access of the tool to the shaft by placing an obstruction through a transverse hole in the outer tube.

